1. (Previously Presented) Sensor for measuring a gas concentration or ion concentration, comprising:

a substrate of a first charge-carrier type;

a drain of a second charge-carrier type fashioned on the substrate;

a source of the second charge-carrier type fashioned on the substrate;

a channel region of the substrate, which is arranged between the drain and the source;

a conductive guard ring arranged outside the channel region;

a sensitive gate layer whose potential depends on an ambient gas concentration or ion concentration, there being an air gap between the gate layer and the channel region, characterized in that between the guard ring and the channel region there is fashioned an oxide layer on whose surface there is arranged a ring structure having a surface conductivity different from that of the rest of the surface of the oxide layer.

2. (Previously Presented) The sensor of claim 1, wherein surface profiling is provided, with elevations and depressions, between the guard ring and the channel region.

3. (Previously Presented) The sensor of claim 2, wherein the ring structure is applied by deposition on a surface between an insulating thin layer on the channel region and the guard ring.

4. (Previously Presented) The sensor of claim 2, wherein the ring structure is applied as an insulating material on one or a plurality of insulator layers, preferably thick oxide layers.

5. (Previously Presented) The sensor of claim 2, wherein the ring structure is fashioned at least

substantially concentrically between the channel region and the guard ring.

6. (Previously Presented) The sensor of claim 2, wherein the ring structure is made of aluminum or an aluminum-copper alloy.

7. (Previously Presented) The sensor of claim 2, wherein the sensitive gate layer comprises a gas-sensitive gate layer.

8.(Currently Amended) A~~The~~ sensor for measuring a gas concentration or ion concentration, comprising:~~of claim 7,~~

a substrate;

a channel region formed in the substrate;

a conductive guard ring arranged outside the channel region;

a sensitive gate layer whose potential depends on an ambient gas concentration or ion concentration, an air gap disposed between the gate layer and the channel region;

an oxide layer disposed between the guard ring and the channel region, a surface of the oxide layer having a ring structure arranged thereon with a surface conductivity different from the surface conductivity of the remainder of the surface; and

~~wherein the field effect transistor formed from the~~a source and a~~the~~ drain forming a field-effect transistor, the transistor being~~is~~ spatially separated from the air gap between the gate layer and the channel region, the ~~gate of the field effect~~ transistor having a gate that ~~being~~ is connected by ~~led via~~ an electrode ~~into~~ the channel region.

9. (Previously Presented) The sensor of claim 2, wherein the elevations simultaneously form the ring structure.

10. (New) The sensor of claim 8, wherein surface profiling is provided, with elevations and depressions, between the guard ring and the channel region.

11. (New) The sensor of claim 10, wherein the ring structure is applied by deposition on a surface between an insulating thin layer on the channel region and the guard ring.

12. (New) The sensor of claim 10, wherein the ring structure is applied as an insulating material on at least one insulator layer.

13. (New) The sensor of claim 10, wherein the ring structure is at least substantially concentric between the channel region and the guard ring.

14. (New) The sensor of claim 10, wherein the ring structure is made of aluminum.

15. (New) The sensor of claim 10, wherein the ring structure is made of an aluminum-copper alloy.

16. (New) The sensor of claim 10, wherein the sensitive gate layer comprises a gas-sensitive gate layer.

17. (New) The sensor of claim 10, wherein the elevations simultaneously form the ring structure.